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17. ABSTRACT (MAX. 250 WORDS) The significance of the emerging environment for the future of public education in California is considered. Certain world revolutions have affected contemporary life. The industrial revolution brought with it increased productivity, research, higher standards of living, longer life spans, and categorization of nations into haves and have nots. The scientific revolution was marked by great progress and discoveries in all scientific research fields. The education revolution, or knowledge explosion, led to an emphasis on the development of an educated, rather than a merely literate, population. With an educated citizenry becoming the means of survival, education is becoming the keystone of national policy. The provision of an education adequate for the needs of tomorrow's adults is a widespread problem. The economic revolution is the movement of the have-not nations into the category of the haves. The cultural revolution has brought about the dominance of Western culture and the disappearance of Eastern culture as a strong force.

Implications of the emerging environment, for the county boards and the county superintendents of schools that form the intermediate unit of administration in California public education, are analyzed. Expansion of the concept of county service to all districts is urged. The intermediate unit can best handle new service areas by becoming a center for research on educational content and method, a center for organized innovation in education, and a power center for local planning. The emerging environment requires the use of specialist teams in education. Specialists could be shared by various schools or districts. School boards should concern themselves with quality control of such aspects of education as organization, program, and product. The resources of local school boards and the county and State school board association should be redirected toward major planning and policy development.

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Jesse D. Stockton
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OPERATION EMERGENCE

by Irving R. Melbo, Dean
School of Education
University of Southern California

Speech Delivered to Kern County School Boards' Association
May 5, 1960

A. The Theme

The very theme of this meeting is charged with vitality. This is entirely in keeping with the character of this assemblage. The Boards and Superintendents of California have no equal as a group in any other state. This is true because you have chosen to assume the responsibilities of your position in terms of a professional rather than a political image.

Indeed, in the development of public education in California, you have been developing standards to which the rest of the nation will have to rise. I congratulate you most heartily and sincerely on your significant accomplishments, and I know that the momentum of progress generated in recent years will move forward with even greater assurance of continued success.

This theme - the emerging role - clearly implies a movement from something to something else. It implies a change, a change with purpose and intent, and a change that, therefore, can be identified and described. I need not mention to this group that in philosophy, in science, and perhaps most of all in education, a problem begins to be solved the moment it can be defined - the moment the right questions are being asked, the moment the specifications are known which the questions must satisfy - for then we

know what we are looking for, what fits and what is relevant. One of the great attributes of this organization is that its membership is accustomed to devoting time and attention to the proper definition of its problems. This is, indeed, the first step to any determination of its future.

I would like to consider first this morning five aspects of the emerging environment in which our district boards and superintendents of schools will be operating in the foreseeable future - in the decade of the sixties. Then, later, I would like to consider the significance of these emerging aspects of the environment for the future of public education in California.

B. The Emerging Environment

The Five World Revolutions. Briefly, the five aspects of the emerging environment are the world Industrial Revolution, the world Scientific Revolution, the world Educational Revolution, the world Economic Revolution, and the world Cultural Revolution.

An Age of Overlap. In discussing the emerging environment we need to remember that we live in an age of transition and that emergence is never complete. We live in an age of overlap, if you please, in which the old of yesterday no longer acts effectively but still provides some standards for judgment, and in which at the same time the new of today or tomorrow lacks definition but still actively guides our actions. We live in a period of overlap - if I can use a few simple illustrations - in which the tools of modern geology still exist side by side with the old techniques of water witching, in which some of the old concepts and practices of magic stand side by side with some of the most modern developments of medicine; and, indeed, in which some of the old values in education, such as mental discipline for a few, stand side by side with the new goal of developing a truly educated people.

Perhaps all of us have experienced the shock of recognizing how deeply involved we are with the unfamiliar new. At the same time we have felt the shock of how irrelevant the familiar of yesterday has already become.

The World Industrial Revolution. The great impact of science on civilization was expressed through the Industrial Revolution which occurred in a part of the world something over a hundred years ago but which is yet to occur in other parts of the world. The Industrial Revolution as we know it was more technological than it was scientific. But out of it came increased productivity, research, higher standards of living, a longer life span, and the development among nations and peoples of two categories - the rich and the poor, the haves and the have nots.

The Industrial Revolution is an accomplished fact in most of Europe, Great Britain, and, of course, in the United States. It has occurred to a substantial degree in the Soviet Union, in the white commonwealth countries of the British Empire, and possibly it is well advanced in China today. But with few exceptions (Japan and Mexico) the rest of the world has not yet experienced the Industrial Revolution or it is now in the process of experiencing the beginning stages. Thus, the world Industrial Revolution has created the haves and the have nots - the poor and the rich among nations.

In this country the Industrial Revolution was fortunately accompanied by public education, and as a result, in this nation more than in any other part of the world, we have taken peasantry out of agriculture; we have taken slavery out of industry; and we have taken drudgery out of the home.

In this Industrial Revolution we have seen how science and its daughter, technology, have reshaped a part of the world - not only from century to century, but from decade to decade. Wherever science is at its highest there people will live the best, if the products

of science and technology have become a part of the pattern of living. But this requires communication and it requires education. When these are combined, and wherever these are combined, there people will have the real say-so about the future of the world, providing they can do it by maintaining freedom and respect for the individual.

The World Scientific Revolution. This is an aspect of the emerging environment which I believe we are just entering. I think we will feel the greatest impact of this during the next forty years, from 1960 to 2000 A. D., approximately. The world Scientific Revolution will be accompanied, of course, by a continuation of the Industrial Revolution in those parts of the world that have not yet experienced it and by a vastly accelerated development in our own country.

The world Scientific Revolution will be marked by phenomenal progress and discoveries in all fields in which scientific research is being richly supported. By way of illustration, I would like to list briefly about ten items of lunch table conversation in which it has been my privilege to participate recently with some of the scientists on our faculty. I am sure I do not know all of the implications of these items, but we can all conjecture as to what they may be.

1. They tell me that we now have developed techniques for the amplification of light. Long ago we were able to amplify sound - sometimes, I fear, to our everlasting distress. The amplification of light takes minute quantities that can be amplified into undetermined amounts.

2. They tell me that in the near future we may have wide-spread use of solar energy for communication, for transportation and for power. This, coupled with the development of a light weight storage battery with a capacity of at least one hundred watts, might revolutionize surface vehicular transportation. One fantastic possibility,

at least to me, is the automobile which has a unit on top for capturing solar energy, with storage in its battery, running on "free gasoline" from the sun. It is possible that this might lead to the complete abandonment of the internal combustion engine as we know it today.

3. They tell me that we know the techniques of wireless transmission of electric energy. My first reaction was that now we can get rid of all the unsightly poles that we have around our streets, but the implications are much more than that, including what the implications are for stockholders in utilities.

4. They say we are on the verge of announcing a number of new vaccines for virus diseases. Some of the people in the medical schools say that with one or two "break-throughs", which they think are entirely possible in the near future, we may be able to control the degenerating factors which affect human life and that the human life span may be extended to at least 125 years. Think of the impact of this on both our culture and our economy.

5. There are others who say that we are on the verge of being successful in the control of the weather. This is internationally significant, for one cannot control weather in one part of the world without affecting it in another. I am a little reluctant to see this come to pass for it also will destroy our only remaining safe topic of conversation.

6. They say that we will be able to cultivate - and notice that word - to cul ivate the sea for food and other resources. This is probably the world's greatest remaining undeveloped and unknown resource. This is the world's own "inner space".

7. We are assured of increased automation, particularly in communications. It is entirely possible in the future that we may have only color TV, even for commercials, and that by the use of built-in electronic devices, instead of going to the market to shop

we can insert a credit card with certain notches and symbols into the TV set and point to the shelf with the canned tomatoes on it or to the lettuce on the vegetable counter as the TV camera scans it, and this automatically is recorded as our order, subsequently delivered, and, of course, subsequently billed. Now think of the implications and what controls this involves on the part of the adults of the family for the younger members of the family.

8. And of course we have talked about the peaceful application of atomic power, for distilling water from the sea by which, among other things, California might become a great exporter of water instead of an importer.

9. We have talked about the conquest of space, and how we may use space.

10. And perhaps - at least in my limited way of thinking the most shocking of all - I have been told that in a number of experiments we are on the verge of a synthetic creation of life.

These are but a handful of little items which, coupled with many others, will make the impact of the World Scientific Revolution on our life and on our educational systems like nothing we have yet known or seen.

Of one thing we can be sure - the future will not be like the present. The changes involving electronics, atomic energy, and automation in particular, are different in kind from those of the past and they will alter the world much more than anything we have known heretofore resulting from our original Industrial Revolution, and the rate of change will be much faster.

Indeed, the greatest problems of the future are the by-products of this World Scientific Revolution. You may have your own list, and I will respect it completely, but my list of problems includes three great menaces which we will need to eliminate

or reduce to a minimum risk. First is the menace of the H-Bomb war. Second is the menace of over-population. Third is the menace of the gap between the rich and the poor - the haves and the have nots among nations.

As we look at this World Scientific Revolution, we are impressed by one other thing. This is the fact that we no longer have all the time in the world to meet the problems of the present. Indeed, one of our principle dangers is that we have been brought up to believe we have all the time in the world. Actually, I think we have very little time - so little that I fear even to guess at it.

In the field of education, and in the personal lives of the present generation in school, the pending impact of the Scientific Revolution, and its by-products, gives special urgency to Woodrow Wilson's warning of more than fifty years ago. In one of his speeches at that time he said, "The man of special skill can be changed into an unskilled laborer over night."

It follows today, with our increased rate and scope of change, that there is also an accelerating and broadened rate of obsolescence. What the implications of this are for education I do not need to develop for this audience.

The World Educational Revolution. Let me turn now to the third revolution - the World Educational Revolution. I would propose first that we might do well to ask our congressmen to establish the date that Sputnik was fired as a national Thanksgiving Day, because it has produced a kind of national thinking about education for which, as a nation, we shall be everlastingly thankful. However, even before Sputnik, it was perfectly obvious that we had entered upon a major World Educational Revolution, and we are still in the midst of it.

The main reason for being engaged in an Educational Revolution is that knowledge is no longer unproductive in terms of goods and services. In fact, the man who works exclusively or primarily with his hands today is the one who is increasingly unproductive. In contrast, the most productive work in today's economy and society is that which applies knowledge and ideas.

Work that is based on the mind rather than on the back - this is the key factor which is bringing about the World Educational Revolution. In both present and future, therefore, there can be no permanent over supply of educated people. On the contrary, the more there are, the greater should be the demand for them, because educated people are the capital of a developed society.

When economists talked of capital in the past they rarely included knowledge. The traditional capital was land or it was wealth in the form of money or goods. Today knowledge is the only real capital, and the process by which we produce educated people is really a means of forming or creating capital. Therefore, the number, the quality and the use of educated people is the most meaningful index today of the wealth-producing capacity of a country.

On an individual basis, there is no capital asset that one can develop which is of greater future significance than his own abilities. On a national basis, there is no more permanent, fundamental capital than the developed abilities of a country's population. As a result educational capacity, like natural resources and industrial plants, is now a factor in international trade, economic development and economic competition.

Educational development, above all, is the central problem of the poor countries - of the have nots - because the secret by which a nation becomes rich is no longer a secret. The secret is to industrialize. There are no rich agricultural nations. For a

nation to industrialize means that it must develop a population which possesses certain kinds of technical and other skills necessary to the formation, management and development of an industrialized economy. They need not have a lot of capital - capital is always available. In fact, capital was available from outside this nation in the development of our economy. A hundred years ago when we were building our railroads, developing our mines, our harbors, and our other vast resources, capital flowed to this country, primarily from England but also from other parts of Europe. Capital still flows on the international level.

The key to wealth among nations is the ability of the people to put together and to operate an industrialized economy. An abundantly increasing supply of highly educated people, then, has become the absolute prerequisite of social and economic development in our world, and I want to say that it is rapidly becoming a condition of national survival. In the past our emphasis has been on developing a literate population, not necessarily an education population. Now, the essential new fact is that a country can be less than fully effective if anyone is educated to less than the limit of his potential. It makes him less productive than he ought to be.

The uneducated in any society today has become the greatest economic liability that a society can have. This is the unproductive fringe of society, just as unproductive as the unemployable, and, indeed, they soon may be among the unemployed. In brief summary of this point, a nation must have an educated population today to be able to progress, to grow, and even to survive.

There was a time when we looked upon the educated person as a kind of social luxury rather than a necessity. Education was a nice thing to have if you could afford it. If the family had money, then we might buy an education for our sons and daughters, almost like we bought a second car or a trip around the world. An education was a kind of

preparation for a dignified leisure rather than for productive work. I remember in my childhood the prevalent assumption that an education was for those who weren't going to work, and we preached that an educated man should not despise the honest worker. Education was a commodity in a luxury category, and, incidentally, this is one of the reasons why teachers' salaries traditionally were low, because on the whole a society pays the employee who services its luxuries relatively low wages.

As an illustration let's look briefly at two outstanding success stories among small nations. One is Switzerland and the other is Mexico. If you wish, add Japan since World War II, but for the moment let's talk about Switzerland and Mexico. Now these two nations really have nothing in common except an extraordinary educational development. Switzerland is the one European country where secondary education in the last thirty years has become almost universal. Mexico is the only country in the world that, since the mid-1930's, has spent no money on defense, but has indeed made education the first charge on its national budget. Thirty years ago Mexico set out to create what its leaders called at that time "a revolution by education". The results in thirty years on the economy of Mexico, apart from its culture, is staggering to behold. But it is not entirely coincidence that the major countries in the free world that have found the going the roughest since World War II (Great Britain and France), are also the countries in which the World Educational Revolution has advanced the least. They are countries in which the supply of educated people - although of high quality - is today still not much larger proportionately than it was in 1940 or even in 1915. In England the supply may well be small considering the steady emigration of so many of their highly educated young people to other parts of the world.

I would like to suggest that ultimately the educational development of a country will control its military, its technological, and its economic potential. We are beginning to see glimpses of this, at least. In an age of super power and of absolute weapons, higher education - that is the development of a highly educated people - may, indeed, be the only area in which a country can be ahead and can still gain a decided advantage.

The greatest impact of the World Educational Revolution, therefore, is on international power and international policies. It is making the supply of highly educated people the deciding factor in the competition between powers for leadership and, perhaps, for survival, and the conclusion from this is as simple as it is new. Educational development becomes a priority of national policy.

The quantity of educated people is not in itself a basis for national policy. The number of Ph. D. 's, scientists, language students, or biologists means very little. It simply is not enough to have large numbers of high school and college graduates as a basic national policy. The national policy on education is adequate only if a country's educated people can formulate, understand, and support high purposes and courageous policies which will reduce or eliminate the great menaces to the world civilization and build positively for a fine future.

There is another aspect of this that I think is particularly important to school administrators. If we look upon education as a capital investment this changes the whole structure of our financial support of education. We do not then look upon education as a kind of overhead cost - a luxury item which we can afford when we are prosperous but which we could do without if need be. We do not look upon it as a kind of expenditure, as money that is spent and not returned. If you think of money for education as overhead, then the question

can always be asked: "Isn't it too much? Can't we save something?" But if education is regarded as a capital investment then we must ask another kind of question: "Is it enough?"

Capital investments have to be committed in terms of a future income that would not be produced without them. How much and what kind of education is necessary now to produce results in 1970, 1980, or 2000 A. D. ? Unless we approach education with this concern, we may, by the rules governing capital investment, spend far too little and waste far too much with little or no return from what we spend. At best, we might get a kind of competency in yesterday's partially obsolete skills.

The more advanced a capital investment, the more productive it is and the higher its rate of return. How would you like to buy a share of an investment which would guarantee you an average yield of thirty percent per year for a thirty-year life? Now, what am I talking about? I'm talking about how much does a college degree add on the average to a man's earning power during the thirty years after his graduation? The U. S. Census Bureau says that it adds, on the average, $150,000 during the thirty years after his graduation. Do you know of a better or surer investment than the development of one's own abilities or, cumulatively for a nation, the development of the abilities of its population.

The critical issue in the World Educational Revolution is: "Will the education provided be adequate for the needs of the times in which we will live. Is the education of today adequate for the needs of 2000 A. D.?" Since we live in an age of rapid change, resulting from the World Scientific Revolution, our education has to prepare men for conditions that do not yet exist and which can not yet be clearly defined. But to be able to meet the needs of his times a man must have learned to learn; he must be conscious

of how much there is still to learn; and he must acquire the basic tools of analysis of expression and understanding, and, above all, the desire for self-development. These are fundamentals.

The World Economic Revolution. At our University, as at many other universities in the country, there are a great many foreign students who come from all over the world. What impresses these people about the United States today relates to our economics. It is not how our rich people live. The world has seen riches before on a larger and more ostentatious scale than anything we have in this country. What impresses our foreign students most is how the poor of this country live. They say, "If we can only develop our country up to the level of your poor." To them, even the poor in this country appear to be rich. Therefore, a proper goal in the world economic revolution is to eliminate poverty on an international basis, as we have on a national basis in the United States.

The ultimate resource in the reduction of poverty is people, because it is people more than raw materials that develop an economy. Switzerland is a beautiful example.

The world economic revolution is fundamentally the movement of the have-not nations into the category of the haves. The greatest need in the underdeveloped countries is leadership to do the new organizing job. This will have to be done by a very small number of able, educated and dedicated people who know to shift from an agricultural to an industrial economy.

Now at this point, the greatest contribution that the richer developed countries can and must make is to give leadership through example. They must be able to show these countries struggling to become haves instead of have nots the example of a functioning industrial society and of a worth-while industrial civilization. This is in the realm of

values, but this is what we believe implicitly when we develop an economy in which everyone is comparatively rich.

The World Cultural Revolution. Do you remember Kipling's famous line - "East is East and West is West and never the twain shall meet." It might be better if we would quote that in its entirety:

"Oh, East is East, and West is West, and
never the twain shall meet,
Till Earth and Sky stand presently at
God's great Judgment Seat.
But there is neither East nor West, Border,
nor Breed, nor Birth,
When two strong men stand face to face,
though they come from the ends of the earth!"

What all observing travelers, all of our government officials who live abroad, the cultural attaches, the managers and technicians, the educators who have been off on various missions in the countries of the world today, know is that East and West have met. The World Cultural Revolution is already far advanced.

One fundamental fact stands out. The culture of the West has become dominant. It is rapidly being adopted, adapted, and imitated by brown and black alike. The plain fact of the World Cultural Revolution is that the culture of the East has virtually disappeared as a potent dynamic force in the forward movement of world civilization, and this has created a great vacuum.

The emergence of a common, basically western world civilization is the greatest of our new frontiers, the greatest change, the greatest opportunity, yet the least known

and the least understood. Now the problem is how will the vacuum be filled, and in whose image will this western world civilization be cast?

Summary. By way of brief summary, it can be said we are emerging into a world in which cooperation must replace conflict - at least the ultimate conflict - and in which identities of interests will replace isolation. Albert Sweitzer, the Noble Peace Prize winner of a few years ago, said it well. He said that we don't live in a world all our own; others are here, too. Strange as it may be, the skills of cooperation are of a higher order and are more difficult to generate than the forces of conflict. It is always more difficult to exercise reason than prejudice, but it is always more productive.

We are emerging as a nation in which the emphasis will be on the development of an educated people and not merely a literate population. We will come to realize that the presence of an educated people becomes the means of survival, and that education is the keystone of national policy. As such, the budget for education will assume first place, even ahead of what we now call national defense because education is both national defense and world survival at one and the same time.

May I comment parenthetically that the present arguments about federal aid will not even be academic in a few years.

In California we are emerging into a major power center. We have a State that will soon be the most populous, and the most potent politically. I expect to see in succeeding Presidential campaigns one or both parties have on every ticket at least one candidate from California. We will also be the most productive of all the states with the best diversified economy. Although California is located on the crossroads of the world, it will be, as it is now, basically a city State with the world's greatest metropolis and new forms of government not now invented to replace those which are

already obsolete in that they are incapable of meeting the present needs for governing. The old balance of rural domination in the Legislature will be replaced by one more responsible to the centers of population.

Of all the states, California will be the best prepared to cope with the World Educational Revolution. We will continue to develop a structure of more efficient local school districts; we will maintain a varied program of higher education, both public and private; we will continue to build a strong State Department of Education; and the more I see of other states, the deeper is my respect and the greater is my appreciation of Roy Simpson and his colleagues.

We will also continue to develop the effectiveness of our intermediate units of school administration, and this is the area which in many ways holds forth the most promise for guaranteeing that California will lead, rather than lag, in the Educational Revolution of the sixties and the years to follow.

C. The Emerging Role

The Expanded Service Area. May we next consider some of the immediate and direct implications of the emerging environment for the intermediate unit, the county boards, and the county superintendents of schools. We will need to develop further the concept of county service to all districts because an organization that is predicated on service only to some but not to all does not have a very sound base. This means that the quicker we can get rid of this nonsense of the nine hundred A. D. A. district as a kind of a dividing line, the better off we will be. It is fundamental that the intermediate unit serve all districts, regardless of size or type.

We are also going to need to think in terms of a whole group of new service areas and some new emphases, and I would like to mention a few of them.

The Power of Research. Perhaps the most fundamental approach for educational development in the future is through the exercise of the power of research. Most of what we do in education today under the name of research is not more than counting, even if we use a machine to do it. I would like to suggest at this point that research occupies a highly significant role in each of the World Revolutions of which we spoke earlier. Indeed, we are engaged in what I would call a research explosion.

There was a time when research was looked upon as one of these things that was nice to have if you could afford it. There was an attitude that money spent on research was non-productive. But if you were to look at the industrial concerns in this country today which have grown most as measured by their earnings and their net worth, I think you would find almost a perfect correlation between such growth and the amount of money they have invested annually in research. Far from being a marginal factor, industrial research has become a powerhouse of economic energy. It is now generally pursued alike by large and small business, by old and new industries.

Proportionately, industrial research expenditures have grown faster than any other item in the nation's budget excepting only military research. Thirty years ago industrial research took about one-tenth of one percent of the national income. Today it takes almost two percent of an income four times larger. There is little doubt that the trend is for further continued growth, both absolutely and in terms of a percent of the national income.

I think the most productive approach for us - in terms of research in education - will be through what has been called "the organization of ignorance". By an organization of ignorance I mean essentially this, a systematic organization and listing of the

things we don't know about any major problem. What are the things we don't know about learning? About the rate of learning? What are the ultimate limits of how much a person can learn? What can be learned at which levels of capacity?

Let me use two illustrations in the memories of all of us here. A number of years ago we began to accumulate a substantial amount of money through the March of Dimes to apply to research on poliomyelitis. Our approach to that research problem was through an organization of ignorance. We identified, we listed all of the things we didn't know about polio. We proceeded then to systematically research these unknowns out. What was the outcome? A successful vaccine.

A number of years earlier when the physicists came up with the theory that you could split an atom, you didn't have to be much of a physicist to know that potentially you could make a bomb out of it. Now we know that the development of the first atomic bomb in this country proceded in terms of an organization of ignorance.

While research may procede in ways other than by the organization of ignorance, the plain fact is that we must at least organize educational research in terms of what are the specifications for future knowledge or skills. Potentially, in every region of California there should be a great center for educational research. On the whole, local school districts are not going to be more able to do effective research by themselves in the future than they have in the past. Therefore, I think that the intermediate unit becomes the logical unit to develop the great power of research, jointly with local school districts and cooperatively with institutions that can do research. This will be as productive in education, I am sure, as it has been in our industries. It will be even more productive to whatever extent we regard education as capital investment.

A Center for Innovations. I think that our intermediate units will become the center for systematic, organized innovations in education. We have a little different temper these days than we had a few years ago, when it was proper to experiment on raising hogs but you couldn't experiment with people or schools. Now, with the passage of the National Defense Education Act and the availability of a certain amount of money under the Cooperative Research Program - plus the shaking that we got from Sputnik - we are much more free to engage in certain kinds of judicious experimentations. Indeed, we are almost expected to have some pilot programs in progress today.

Today, in education or in industry, we can organize deliberately to accomplish innovation. I believe there is no better unit for this kind of development than the intermediate unit working cooperatively with local districts in the region. The local district is too small and it is too busy with its operating program to do much by itself in the systematic design of innovations. The State is too far away, too big, and too diverse.

By innovation here I mean a purposeful, systematic, organized venture into the unknown. It is intended to give us new power for action through new capacity to see - new vision. Its first ingredient is imagination. Its tools are the procedures of research. There is no area beyond innovation. Indeed, new institutions especially designed for innovation have become of central importance in many areas of modern life, and I can well believe that this may be one of the most significant features of the intermediate unit of the future.

As we consider this opportunity, we must recognize that there is technological innovation and there is social innovation. The latter, of course, must consider both the needs and opportunities and then develop the concepts and institutions to satisfy them. This is what we will have to do to complement our scientific revolution, because

technological innovation without social innovation leaves a great big lag. Actually, we need social innovation more than we need technological innovation because the new frontiers of this modern world are mostly frontiers of the mind. We need to develop in considerable quantity the intellectual heirs of Thomas Jefferson, Thomas Paine, and Woodrow Wilson.

I do not know what are the limits of innovation. I do know that our intermediate units can be the center for the design and development of innovations which may take place in one or more of the local school systems. The only limits I know are those of imagination and good judgment.

A Power Center for Local Planning. It seems to me that our intermediate unit may well become a power center for local planning. This matter of planning has only recently become respectable as a function of government. Planning commissions are relatively new in American communities and they still tend to be limited to land use. In education, organized planning must be related to research and innovation. They are all part of a directional development, but our choice is not between a highly centralized plan and no plan at all. Our choice actually is between a centralized plan and a localized plan, but realistically only the local plan can work because central planning at a remote level degenerates into no plan.

In a State like California the most effective power center for planning has to be fairly close to the local operating level. This, I think, is our intermediate unit, our county schools office and our county boards of education. I think our State Department of Education, which I greatly respect and admire, is too far removed. The local district by itself is perhaps too close to the little problems that get in the way of the big ideas, but local districts working within the framework of a larger organization could be most effective.

What does this process of planning require? It requires an attitude that is far from common. It requires that rarest of human insights - the willingness to question one's own success. But it is the only attitude that can make productive and which can, indeed, make bearable the risks of innovation. It is easy, for instance, to think through a state's educational policy when it has failed. Any editorial writer can do that. It is much more difficult to innovate a new concept of educational policy when the present one is reasonably successful. And yet this is the only way in which we can insure continued progress and prevent failure. The aim of the power center for local planning has to be that of doing better what we may already be doing well.

This power center for local planning does not necessarily imply a "brain trust", but it does suggest people who can think. If you will consider for a moment the school administrators you know in your own counties, how many of them are so busy with the day to day job that they are literally running all the time, and they never have time to do any thinking. What they need is a systematic, organized approach to planning. We can agree that this needs to be done. But where is it to be done? And how can it be done best? It has to be organized, as I see it, as a part of a basic function of our future intermediate unit by a staff selected for its ability to think through problems and to plan beyond the barriers of present time and circumstance.

The Specialist Teams. I think school systems will increasingly be using teams of specialists as an approach to the solution of many problems. Now this means, among other things, a different concept of staffing our school systems in the foreseeable future. Not all of the specialists on the staff need be employed on the basis of full-time continuing service, because their services may be derived from a contractual relationship with other

sources such as our colleges and universities which are a reservoir of highly specialized competencies, or by contract with county offices, or inter-district contract.

This is the one way by which a school board may bring to its district numbers of specialists as needed. This is how a superintendent can set up the teams of specialists which will serve under the new organization. Man doesn't work by himself anymore, not effectively, very long or very far. The inter-stimulation of the team members, each on the other, may produce a whole greater than the sum of its parts. It is the job of administration to release the intelligence of the members of an organization in the most effective way.

Even in our universities, the most specialized of our organizations, we see the interdisciplinary courses and research becoming increasingly common. I think of the Youth Studies Center which we have at the University of Southern California, in which we are making a concentrated interdisciplinary study of the factors that pertain to youth and youth behavior. The disciplines involved are law, social work, education, psychology, public administration, police administration, sociology, and others. Deliberately organized teams of specialists are drawn from many fields and areas, brought together to concentrate their respective skills and knowledges on the solution of the problem. This is, in effect, what we do in the schools when we bring together the team of a psychometrist and a psychologist, or a counselor and a teacher to work on a problem.

We have not begun, in our approach to the development of the curriculum, to make full use of teams of specialists. Such task forces, such teams of men from different specialties working together, will surely be a vital part of the school district of the future.

The Center for Quality Control. There are two words which have great significance for our future. Those two little words are "quality control". I see our school boards becoming much concerned with quality control of education, including such essential aspects as organization, program, and product.

One of the most important things in quality control is to maintain an effective organization. It is so easy for organizations to degenerate into what I call bureaucracies. You don't have to be in Washington or Sacramento to have a bureaucracy. What are some of the symptoms of a bureaucracy? Among them are mistaking efficiency for effectiveness; measuring the performance by quantity instead of quality; putting security ahead of service; confusing getting along with people and endless meetings with teamwork and cooperation; and mistaking size for importance.

Organizations become old, too, and they need continuing study, either internally or by outside agencies. One function of quality control would be to make continual diagnoses of organizations - continued checks - because an organization may become sick even before it is obsolete. For example, an organization is sick when promotion becomes more important to its people than accomplishing the job they're in; it is sick when it is concerned more with avoiding mistakes than the taking of risks, as of counteracting the weaknesses of its members rather than the building of their strengths; and, it is sick when good human relations become more important than performance and achievement.

It is not difficult to see when an organization is sick. One only has to listen to the language and style within it. When people talk about implementing instead of doing, and of finalizing instead of finishing, I think the organization is running a fever. However, the important thing is how to re-design or to re-vitalize or to re-build the organization. This is a challenge of quality control.

Quality control of the program, the courses of study, is of no less importance. As one of my more articulate friends says, the great job of the future in education is to "clean the crud out of the curriculum".

With the great and rapid growth of knowledge in any field, it follows that the rate of obsolescence in the field is accelerated. This forces a kind of concern for curriculum development and change, the like of which we have never seen. Since there are relatively few local districts which are able to do this with any degree of effectiveness with their own resources, or with their own personnel in terms of time required, it becomes necessary to provide for continuing curriculum study at all levels as a principle obligation of the intermediate unit which is really a kind of federation of districts.

The Proper Use of School Boards. We have a great and invaluable resource in our elected lay school boards, and we need to make better and more productive use of them. When I say "use them", I mean to release their good will toward education and their creative and constructive capacities.

In terms of the district's share in the development of a power center for research, for innovations, for planning, and for quality control, there is a rare opportunity for the exercise of lay leadership. Therefore, I would like to see the resources inherent in our school boards and the county and state school board association redirected toward matters of large rather than small import. Their efforts and their intelligence need to be mobilized for planning with vision, for major policy development, and for all the functions that are inherent in our concept of educational statesmanship.

Perhaps most important is the example they may set for their communities of a truly high level of board operation, and the flow of ideas and ideals which they can cause to come before the community. This in no way breaches the autonomy or the

freedom of the local boards, but it becomes a great guiding influence and example which enables them to move forward with giant strides to provide a kind of education for their communities which will be adequate for the times in which our children will live. Education for 2000 A. D. is now, not 40 years hence.

There are some critics who think we should have a "national" system of education, and who oppose local control because it means that a lot of "ignorant" school board members make decisions about education. I hope we never get away from the concept of the local lay elective governing board. I do not believe there is evidence that there would be more wisdom exercised if schools were run out of some center, such as Sacramento or Washington. I doubt that state or national political figures would know how to make educational decisions in terms of local conditions better than local people.

Our society works because we believe that wisdom can be found in many places throughout the land. I would rather trust the wisdom of local boards than the half-baked nonsense of the noisy critics of education. Possibly some local school board members are uninformed, but most of them are also parents, concerned with the future of their own children. I know we can always count on their good intentions, and out of their experience will come wisdom.

Conclusion. In our approach to the future, we must avoid a dangerous trap. It is all too easy for our policies and our actions to be largely molded by the facts of yesteryear. It is so easy to approach a new problem as a temporary emergency that will go away if we pretend it isn't there, if we treat it only as a deviation from a norm that ought to be restored. It is so easy to shape our efforts to problems rather than to opportunities.

This at the bottom, it seems to me, is a part of the crisis of the World Educational Revolution. It is a crisis of vision and understanding, of leadership and realism. We are in danger, in the development of our educational structure in this country, not because we are weak, but because we misdirect our strength to fight over yesterday's battles and to repeat yesterday's slogans.

In conclusion, there is a proposition that I hope you may accept. Education does more than confer privilege; it creates responsibility. It does not justify claim; it owes a contribution. I hope that this might be the conviction and the commitment of our professional educators and school board members, because knowledge is power and power is responsibility in the World Educational Revolution. Knowledge and power obviously have been problems of man since the Garden of Eden, but the wise use of them, which I hope we may find in the years ahead, will determine the character and the meaning of our country and our society.

We may, indeed, conquer space - and this is fine - but I think you would permit me to say that I would still rather have a world from which we can see the stars at night. Literally and figuratively, I hope we may always be able to see the stars.